

IN THE CLAIMS

1. (currently amended) A lens structure comprising:
a surface devoid of cusps that includes a seamless profile;
wherein the surface includes a plurality of convex elements and
concave elements; and
~~wherein the convex elements include a positive surface curvature
area and wherein the concave elements include a negative
surface curvature area;~~
a filtering surface for producing a controlled amount of spherical
aberration.
2. (currently amended) The lens structure of claim 1 further
comprising:
a plurality of cells;
wherein the convex elements include a positive surface curvature
area and wherein the concave elements include a negative
surface curvature area; and
wherein the cells include an array of alternating convex elements
and concave elements.
3. (previously presented) The lens structure of claim 2 wherein each
cell includes a rectangular shape.
4. (previously presented) The lens structure of claim 2 wherein each
cell includes a hexagonal shape.

5. (previously presented) The lens structure of claim 1 wherein the surface includes a continuous wave structure.
6. (previously presented) The lens structure of claim 2 wherein each cell includes at least two orthogonal waves.
7. (previously presented) The lens structure of claim 2 wherein each cell includes at least three waves that are separated by 120 degrees.
8. (previously presented) The lens structure of claim 1 wherein the lens structure includes a plurality of close packed hexagonal array of lenslets that include near circular symmetry.
9. (cancelled)
10. (currently amended) The lens structure of claim 9 1 wherein the filtering surface includes at least a first region for producing over-corrected spherical aberration and at least a second region for producing under-corrected spherical aberration.
11. (previously presented) The lens structure of claim 10 wherein the first region has a first slope error and the second region has a second slope error.
12. (currently amended) The lens structure of claim 9 1 wherein the filtering surface includes a plurality of first regions for producing over-corrected spherical aberration and a plurality of second regions for

producing under-corrected spherical aberration: wherein the first regions and the second regions are approximately equal in area and wherein the first regions and second regions are uniformly distributed over the filtering surface.

13. (currently amended) The lens structure of claim 9 1 wherein the filtering surface performs low pass filtering.

14. (previously presented) The lens structure of claim 1 wherein the surface profile includes one of a plurality of circular arcs and a plurality of sinusoids.

15. (previously presented) The lens structure of claim 1 wherein the surface profile includes at least one aspheric function.

16. (previously presented) A lens structure comprising:
a plurality of cells:
wherein each cell includes a surface that is devoid of cusps and
that includes a seamless profile:
wherein the cells includes include at least one convex element
and at least one concave element: and
wherein the surface produces a controlled amount of under-
corrected spherical aberration and over-corrected
spherical aberration.

17. (previously presented) The lens structure of claim 16

wherein the convex element includes a positive surface curvature area and wherein the concave element include a negative surface curvature area; and

wherein the cells include an array of alternating convex elements and concave elements.

18. (previously presented) A lens structure comprising:
a surface that includes at least a first region for producing over-corrected spherical aberration and at least a second region for producing under-corrected spherical aberration;
wherein the surface produces a controlled amount of under-corrected spherical aberration and over-corrected spherical aberration.

19. (previously presented) The lens structure of claim 18 wherein the surface is for performing a filtering function.

20. (previously presented) The lens structure of claim 18 wherein the surface is derived from a prototype un-filtered surface.